OWL ENGINEERING, INC.
CONSULTING COMMUNICATIONS ENGINEERS
1306 W. County Road F, St. Paul, MN 55112
(612) 631-1338 • Fax (612) 631-3502

ENGINEERING EXHIBIT FOR APPLICATION FOR FM CONSTRUCTION PERMIT MISSISSIPPI VALLEY BROADCASTERS, INC. La CROSSE, WISCONSIN

CHANNEL 292 12 KW 145 METERS

ENVIRONMENTAL IMPACT STATEMENT

The instant proposal is categorically excluded from environmental processing since none of the conditions of Section 1.1306(b)(2) and (3) would be involved for the following reasons:

1) The site proposed is not in or near any location referenced in Section 1.1306(b)(1) as being of environmental interest.

2) The provisions of Section 1.1306(b)(2) relating to the use of high intensity strobe lighting does not apply since the antenna height proposed with this application does not require this form of lighting to be utilized.

3) Finally, the operation would not result in the adopted radio frequency radiation exposure guideline being exceeded at any location on the ground. Mississippi Valley will utilize a high gain antenna to minimize the downward radiation. Hence, the conditions of Section 1.1306(b)(3) would not be involved.

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CHANNEL 292 12 KW 145 METERS

CONCLUSIONS

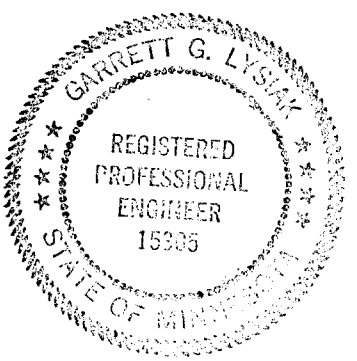
Based on the engineering studies provided, the following conclusions can be obtained:

(1) Implementation of the instant proposal will provide La CROSSE with a full time aural broadcast service.

(2) 150,656 persons in 4,592 square kilometers would have an available signal strength of 60 dBu or greater from the proposed construction location.

(3) All of La CROSSE would be served with a signal of 70 dBu or greater from the proposed construction site.

(4) The proposal is in complete conformance with all technical rules of the Federal Communications Commission.



Garrett G. Lysiak

Garrett G. Lysiak, P.E.

January 14, 1991

Section V-B - FM BROADCAST ENGINEERING DATA	FOR COMMISSION USE ONLY File No. _____ ASB Referral Date _____ Referred by _____

Name of Applicant

MISSISSIPPI VALLEY BROADCASTERS, INC.

Call letters *(if issued)*	Is this application being filed in response to a window? [X] Yes [ ] No If Yes, specify closing date: January 21, 1991

Purpose of Application: *(check appropriate box(es))*

- [X] Construct a new (main) facility
- [ ] Construct a new auxiliary facility
- [ ] Modify existing construction permit for main facility
- [ ] Modify existing construction permit for auxiliary facility
- [ ] Modify licensed main facility
- [ ] Modify licensed auxiliary facility

If purpose is to modify, indicate below the nature of change(s) and specify the file number(s) of the authorizations affected.

- [ ] Antenna supporting-structure height
- [ ] Effective radiated power
- [ ] Antenna height above average terrain
- [ ] Frequency
- [ ] Antenna location
- [ ] Class
- [ ] Main Studio location
- [ ] Other *(Summarize briefly)*

File Number(s) DOC 89-589

1. Allocation:

Channel No.	Principal community to be served:		
	City	County	State
292	LaCrosse	LaCrosse	WI

Class *(check only one box below)*

[ ] A [ ] B1 [ ] B [X] C3
[ ] C2 [ ] C1 [ ] C

2. Exact location of antenna.

(a) Specify address, city, county and state. If no address, specify distance and bearing relative to the nearest town or landmark.

3.5 km from LaCrosse, WI, at a bearing of 69°, atop Granddad Bluff.

(b) Geographical coordinates (to nearest second). If mounted on element of an AM array, specify coordinates of center of array. Otherwise, specify tower location. Specify South Latitude or East Longitude where applicable; otherwise, North Latitude or West Longitude will be presumed.

Latitude	°	'	"	Longitude	°	'	"
	43	48	45		91	11	55

3. Is the supporting structure the same as that of another station(s) or proposed in another pending application(s)? [ ] Yes [X] No

If Yes, give call letter(s) or file number(s) or both. ---

If proposal involves a change in height of an existing structure, specify existing height above ground level including antenna, all other appurtenances, and lighting, if any. ---

SECTION V-B – FM BROADCAST ENGINEERING DATA (Page 2)

4. Does the application propose to correct previous site coordinates? ☐ Yes ☒ No
If Yes, list old coordinates.

Latitude ° ' "	Longitude ° ' "

5. Has the FAA been notified of the proposed construction? ☒ Yes ☐ No
If Yes, give date and office where notice was filed and attach as an Exhibit a copy of FAA determination, if available.

Exhibit No. E-1

Date January 14, 1991 Office where filed Great Lakes REgional Office

6. List all landing areas within 8 km of antenna site. Specify distance and bearing from structure to nearest point of the nearest runway.

	Landing Area	Distance (km)	Bearing (degrees True)
(a)	LaCrosse Municipal	6.8	328.13°
(b)			

7. (a) Elevation: *(to the nearest meter)*

(1) of site above mean sea level: 371.9 meters

(2) of the top of supporting structure above ground (including antenna, all other appurtenances, and lighting, if any); and 37.5 meters

(3) of the top of supporting structure above mean sea level [(aX1) + (aX2)] 409.4 meters

(b) Height of radiation center: *(to the nearest meter)* H = Horizontal; V = Vertical

(1) above ground 31 meters (H)

31 meters (V)

(2) above mean sea level [(aX1) + (bX1)] 403 meters (H)

403 meters (V)

(3) above average terrain 145 meters (H)

145 meters (V)

8. Attach as an Exhibit sketch(es) of the supporting structure, labelling all elevations required in Question 7 above, except item 7(b)(3). If mounted on an AM directional-array element, specify heights and orientations of all array towers, as well as location of FM radiator.

Exhibit No. E-2

9. Effective Radiated Power:
(a) ERP in the horizontal plane 12 kw (H*) 12 kw (V*)

(b) Is beam tilt proposed? ☐ Yes ☒ No

If Yes, specify maximum ERP in the plane of the tilted beam, and attach as an Exhibit a vertical elevational plot of radiated field.

Exhibit No. N/A

--- kw (H*) --- kw (V*)

*Polarization

SECTION V-B – FM BROADCAST ENGINEERING DATA (Page 3)

10. Is a directional antenna proposed? [X] Yes [ ] No

If Yes, attach as an Exhibit a statement with all data specified in 47 C.F.R. Section 73.316, including plot(s) and tabulations of the relative field. Exhibit No. E-9

11. Will the proposed facility satisfy the requirements of 47 C.F.R. Sections 73.315(a) and (b)? [X] Yes [ ] No

If No, attach as an Exhibit a request for waiver and justification therefor, including amounts and percentages of population and area that will not receive 3.16 mV/m service. Exhibit No. N/A

12. Will the main studio be within the protected 3.16 mV/m field strength contour of this proposal? [X] Yes [ ] No

If No, attach as an Exhibit justification pursuant to 47 C.F.R. Section 73.1125. Exhibit No. N/A

13. (a) Does the proposed facility satisfy the requirements of 47 C.F.R. Section 73.207? [ ] Yes [X] No

(b) If the answer to (a) is No, does 47 C.F.R. Section 73.213 apply? [ ] Yes [X] No

(c) If the answer to (b) is Yes, attach as an Exhibit a justification, including a summary of previous waivers. Exhibit No. N/A

(d) If the answer to (a) is No and the answer to (b) is No, attach as an Exhibit a statement describing the short spacing(s) and how it or they arose. Exhibit No. E-10

(e) If authorization pursuant to 47 C.F.R. Section 73.215 is requested, attach as an Exhibit a complete engineering study to establish the lack of prohibited overlap of contours involving affected stations. The engineering study must include the following: Exhibit No. E-11

(1) Protected and interfering contours, in all directions (360°), for the proposed operation.
(2) Protected and interfering contours, over pertinent arcs, of all short-spaced assignments, applications and allotments, including a plot showing each transmitter location, with identifying call letters or file numbers, and indication of whether facility is operating or proposed. For vacant allotments, use the reference coordinates as the transmitter location.
(3) When necessary to show more detail, an additional allocation study utilizing a map with a larger scale to clearly show prohibited overlap will not occur.
(4) A scale of kilometers and properly labeled longitude and latitude lines, shown across the entire exhibit(s). Sufficient lines should be shown so that the location of the sites may be verified.
(5) The official title(s) of the map(s) used in the exhibits(s).

14. Are there: (a) within 60 meters of the proposed antenna, any proposed or authorized FM or TV transmitters, or any nonbroadcast *(except citizens band or amateur)* radio stations; or (b) within the blanketing contour, any established commercial or government receiving stations, cable head-end facilities, or populated areas; or (c) within ten (10) kilometers of the proposed antenna, any proposed or authorized FM or TV transmitters which may produce receiver-induced intermodulation interference? [X] Yes [ ] No

If Yes, attach as an Exhibit a description of any expected, undesired effects of operations and remedial steps to be pursued if necessary, and a statement accepting full responsibility for the elimination of any objectionable interference (including that caused by receiver-induced or other types of modulation) to facilities in existence or authorized or to radio receivers in use prior to grant of this application. *(See 47 C.F.R. Sections 73.315(b), 73.316(e) and 73.318.)* Exhibit No. E-3

15. Attach as an Exhibit a 7.5 minute series U.S. Geological Survey topographic quadrangle map that shows clearly, legibly, and accurately, the location of the proposed transmitting antenna. This map must comply with the requirements set forth in Instruction V. The map must further clearly and legibly display the original printed contour lines and data as well as latitude and longitude markings, and must bear a scale of distance in kilometers.

Exhibit No. E-4

16. Attach as an Exhibit *(name the source)* a map which shows clearly, legibly, and accurately, and with the original printed latitude and longitude markings and a scale of distance in kilometers:

Exhibit No. E-5

STATE OF WISCONSIN/MINNESOTA/IOWA Scale 1:500,000

(a) the proposed transmitter location, and the radials along which profile graphs have been prepared;

(b) the 0.16 mV/m and 1 mV/m predicted contours; and

(c) the legal boundaries of the principal community to be served.

17. Specify area in square kilometers (1 sq. mi. = 2.59 sq. km.) and population (latest census) within the predicted 1 mV/m contour.

Area 4,592 sq. km. Population 150,656

18. For an application involving an auxiliary facility only, attach as an Exhibit a map *(Sectional Aeronautical Chart or equivalent)* that shows clearly, legibly, and accurately, and with latitude and longitude markings and a scale of distance in kilometers:

Exhibit No. N/A

(a) the proposed auxiliary 1 mV/m contour; and

(b) the 1 mV/m contour of the licensed main facility for which the applied-for facility will be auxiliary. Also specify the file number of the license.

19. Terrain and coverage data *(to be calculated in accordance with 47 C.F.R. Section 73.313)*

Source of terrain data: *(check only one box below)*

[X] Linearly interpolated 30-second database [ ] 7.5 minute topographic map

(Source: NGDC)

[ ] Other *(briefly summarize)*

SECTION V-B – FM BROADCAST ENGINEERING DATA (Page 5)

Radial bearing (degrees True)	Height of radiation center above average elevation of radial from 3 to 16 km (meters)	Predicted Distances	
		To the 3.16 mV/m contour (kilometers)	To the 1 mV/m contour (kilometers)
*	209	27.7	45.2
0	134	22.4	37.6
45	167	20.2	34.2
90	101	19.5	33.3
135	101	19.5	33.4
180	134	22.5	37.7
225	154	24.1	40.0
270	155	24.1	40.0
315	213	27.9	45.5

*Radial through principal community, if not one of the major radials. This radial should NOT be included in the calculation of HAAT. *249.4°

20. Environmental Statement *(See 47 C.F.R. Section 1.1301 et seq.)*

Would a Commission grant of this application come within Section 1.1307 of the FCC Rules, such that it may have a significant environmental impact? ☐ Yes ☒ No

If you answer Yes, submit as an Exhibit an Environmental Assessment required by Section 1.1311. Exhibit No. E-6

If No, explain briefly why not.

Please See Engineering Statement

CERTIFICATION

I certify that I have prepared this Section of this application on behalf of the applicant, and that after such preparation, I have examined the foregoing and found it to be accurate and true to the best of my knowledge and belief.

Name *(Typed or Printed)*	Relationship to Applicant *(e.g., Consulting Engineer)*
Garrett G. Lysiak	Consulting Engineer
Signature: Garrett G. Lysiak	Address *(Include ZIP Code)* Owl Engineering, Inc. 1306 W. County Rd. F, Ste. 105 Arden Hills, MN 55112
Date: January 14, 1991	Telephone No. *(Include Area Code)* (612) 631-1338

ENGINEERING EXHIBIT E-1

DO NOT REMOVE CARBONS

Form Approved OMB No. 2120-0001

US Department of Transportation
Federal Aviation Administration

NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION

Aeronautical Study Number

1. Nature of Proposal

A. Type	B. Class	C. Work Schedule Dates
☒ New Construction	☒ Permanent	Beginning: Per FCC
☐ Alteration	☐ Temporary (Duration _____ months)	End: approval

2. Complete Description of Structure

A. Include effective radiated power and assigned frequency of all existing, proposed or modified AM, FM, or TV broadcast stations utilizing this structure.

B. Include size and configuration of power transmission lines and their supporting towers in the vicinity of FAA facilities and public airports.

C. Include information showing site orientation, dimensions, and construction materials of the proposed structure.

A) 12 KW ERP(H&V) 106.3 MHz
B) Does not apply.
C) Self-Supporting tower.

(if more space is required, continue on a separate sheet.)

3A. Name and address of individual, company, corporation, etc. proposing the construction or alteration. *(Number, Street, City, State and Zip Code)*

(507) 288-1964
area code Telephone Number

Mississippi Valley Broadcasters, Inc.
625 19th St, NW Ste 507
Rochester, MN 55901

B. Name, address and telephone number of proponent's representative if different than 3 above.

Owl Engineering, Inc.
1306 W. County Rd. F, Ste. 105
Arden Hills, MN 55112
(612)631-1338

4. Location of Structure

A. Coordinates *(To nearest second)*	B. Nearest City or Town, and State	C. Name of nearest airport, heliport, flightpark, or seaplane base
	LaCrosse, WI	LSE
43° 48' 45" Latitude	(1) Distance to 4B: 2.17 Miles Miles	(1) Distance from structure to nearest point of nearest runway: 3.67 nm
91° 11' 55" Longitude	(2) Direction to 4B: 249.4°	(2) Direction from structure to airport: 328.13°

5. Height and Elevation *(Complete to the nearest foot)*

A. Elevation of site above mean sea level	1220
B. Height of Structure including all appurtenances and lighting *(if any)* above ground, or water if so situated	123
C. Overall height above mean sea level *(A + B)*	1343

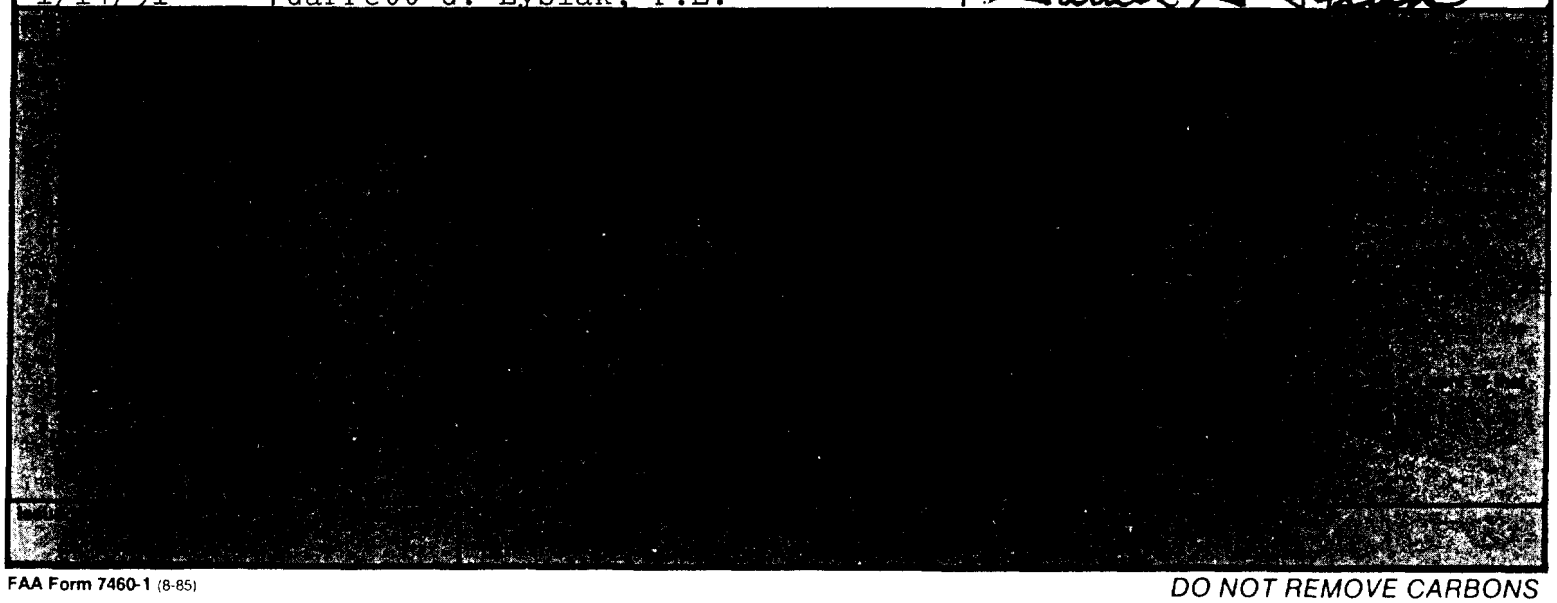
D. Description of location of site with respect to highways, streets, airports, prominent terrain features, existing structures, etc. Attach a U.S. Geological Survey quadrangle map or equivalent showing the relationship of construction site to nearest airport(s). *(if more space is required, continue on a separate sheet of paper and attach to this notice.)*

2.17 miles from LaCrosse, WI, at a bearing of 69°, atop Granddad Bluff.

Notice is required by Part 77 of the Federal Aviation Regulations (14 C.F.R. Part 77) pursuant to Section 1101 of the Federal Aviation Act of 1958, as amended (49 U.S.C. 1101). Persons who knowingly and willingly violate the Notice requirements of Part 77 are subject to a fine (criminal penalty) of not more than $500 for the first offense and not more than $2,000 for subsequent offenses, pursuant to Section 902(a) of the Federal Aviation Act of 1958, as amended (49 U.S.C. 1472(a)).

I HEREBY CERTIFY that all of the above statements made by me are true, complete, and correct to the best of my knowledge. In addition, I agree to obstruction mark and/or light the structure in accordance with established marking & lighting standards if necessary.

Date	Typed Name/Title of Person Filing Notice	Signature
1/14/91	Garrett G. Lysiak, P.E.	Garrett G Lysiak



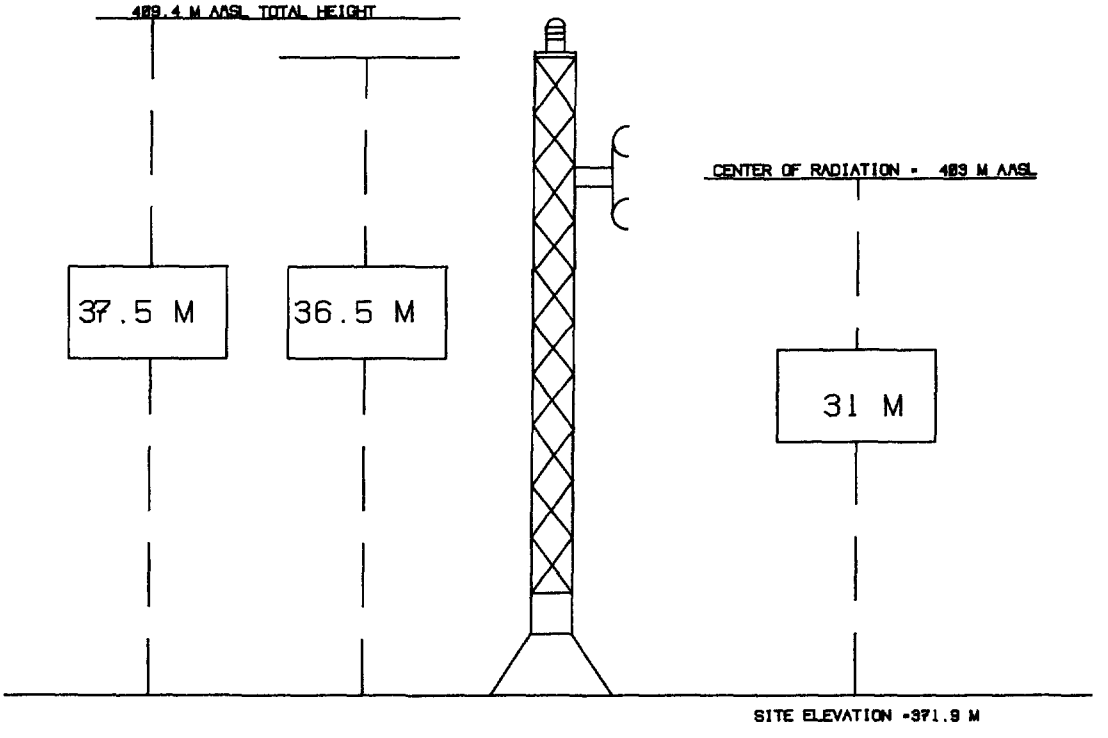
FAA Form 7460-1 (8-85)

DO NOT REMOVE CARBONS

OWL ENGINEERING, INC.

CONSULTING COMMUNICATIONS ENGINEERS

1306 W. County Road F, St. Paul, MN 55112
(612) 631-1338 • Fax (612) 631-3502



OWL ENGINEERING, INC.
ENGINEERING EXHIBIT E-2

LA CROSSE, WI

CHANNEL 292 C3

NOT TO SCALE

OWL ENGINEERING, INC.
CONSULTING COMMUNICATIONS ENGINEERS
1306 W. County Road F, St. Paul, MN 55112
(612) 631-1338 • Fax (612) 631-3502

ENGINEERING EXHIBIT E-3
APPLICATION FOR FM CONSTRUCTION PERMIT
MISSISSIPPI VALLEY BROADCASTERS, INC.
La CROSSE, WISCONSIN

CHANNEL 292 12 KW 145 METERS

PROPOSED TRANSMITTER AND STUDIO LOCATIONS

Mississippi Valley proposes to operate from a site uniquely described by the geographic coordinates:

43° 48' 45" North Latitude

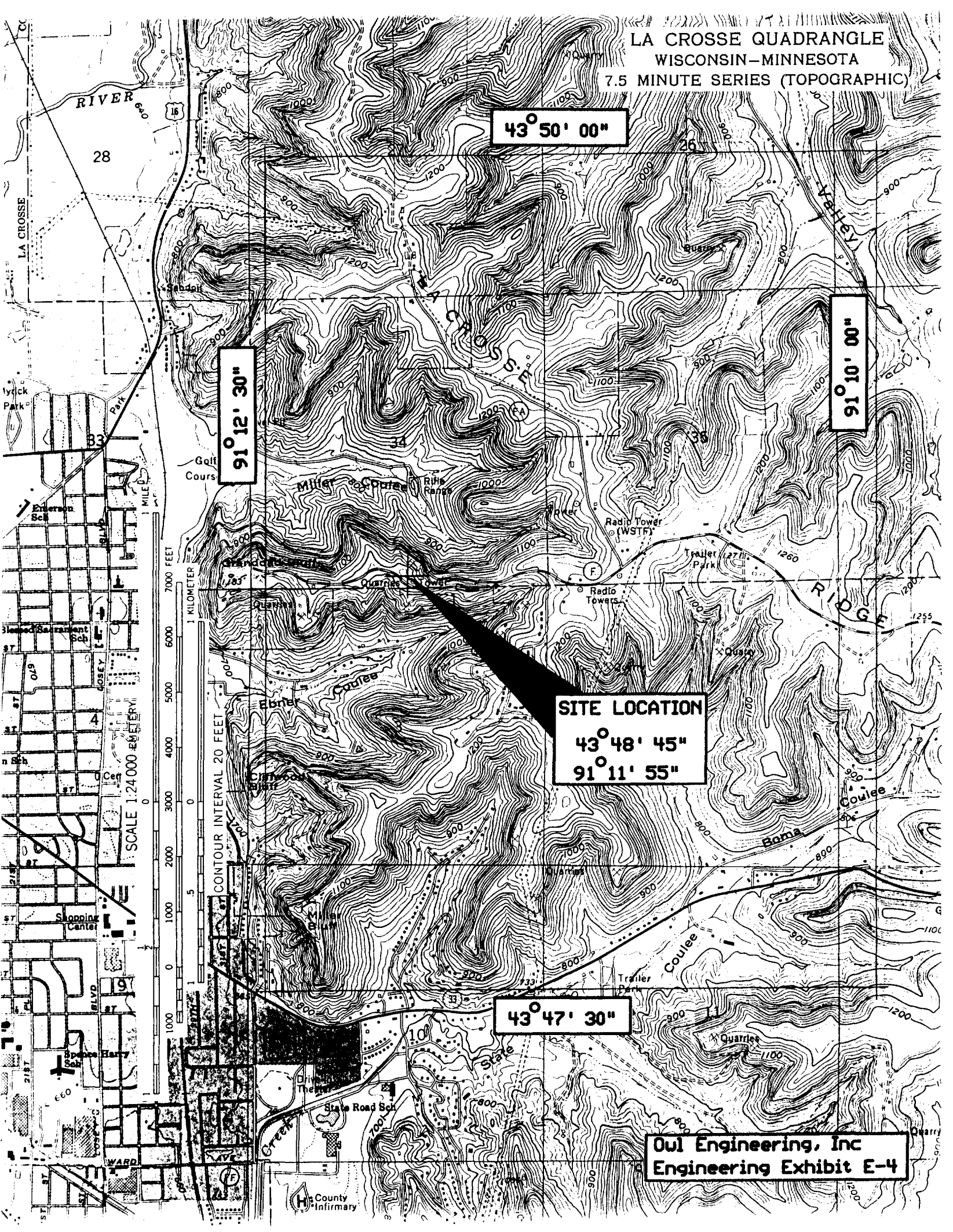
91° 11' 55" West Longitude

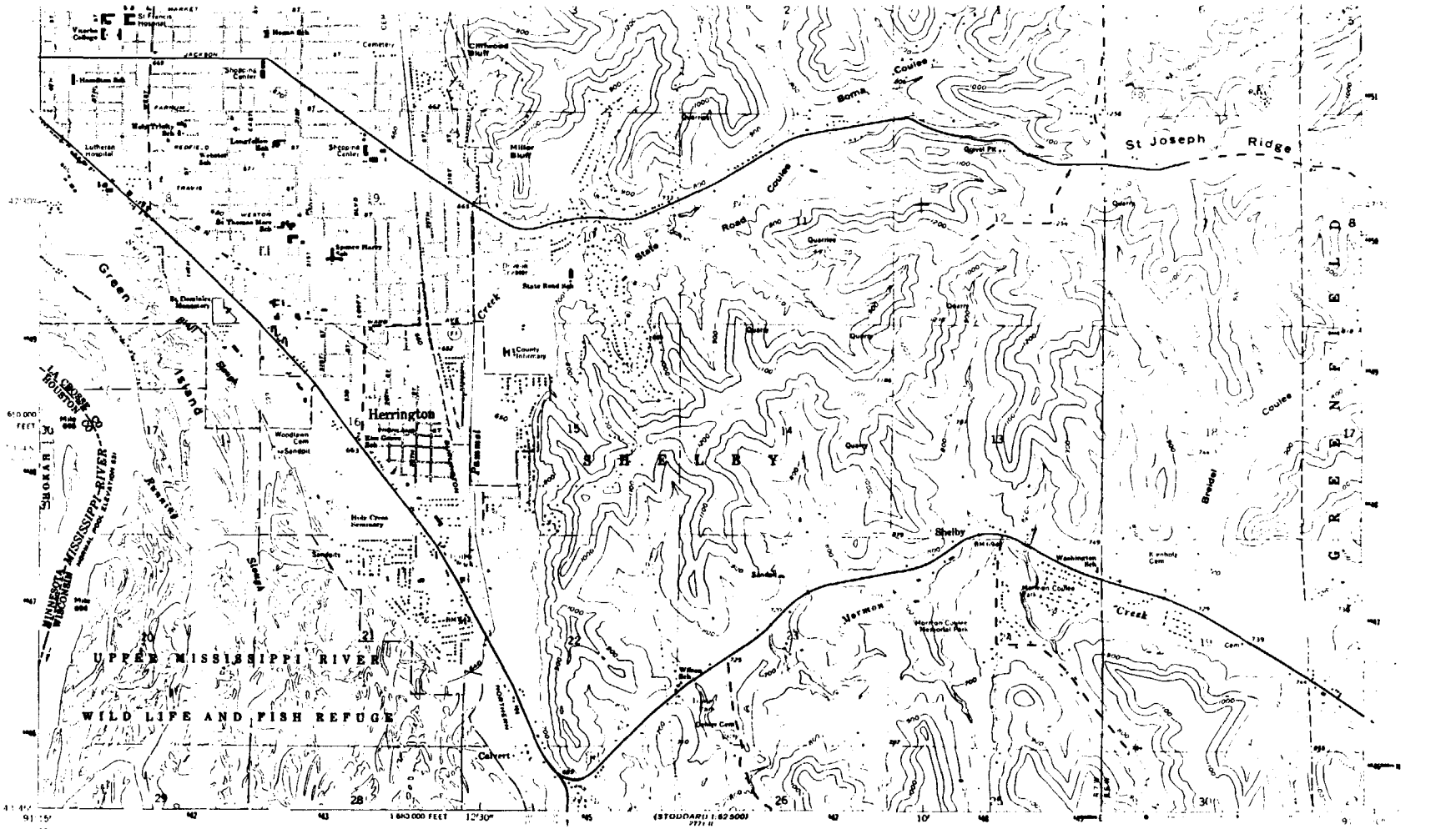
Figure E-4 is a portion of the La Crosse, Wisconsin 7.5 minute U.S.G.S. topographic quadrangle map showing the proposed transmitter site. Radio station WIZM's auxiliary facility is located near the proposed site. Mississippi Valley accepts responsibility for any receiver induced intermodulation or objectionable interference that may occur as a result of the proposed operations.

Because the area is Rural, there is not expected to be any problem with blanketing interference. The applicant is aware of the provisions of Section 73.318 of the FCC's Rules and the requirement for satisfying all complaints of blanketing interference that are received with-in a one-year period.

Figure E-2 is a sketch showing important elevations for the antenna and its supporting structure at the proposed construction site.

The main studio for the station will be located in the La CROSSE area, at a site yet to be determined.


LA CROSSE QUADRANGLE
WISCONSIN–MINNESOTA
7.5 MINUTE SERIES (TOPOGRAPHIC)
43° 50' 00"
91° 12' 30"
91° 10' 00"
43° 47' 30"
SITE LOCATION
43° 48' 45"
91° 11' 55"
SCALE 1:24 000
CONTOUR INTERVAL 20 FEET
1 KILOMETER
1 MILE
7000 FEET
Owl Engineering, Inc
Engineering Exhibit E-4



Mapped, edited, and published by the Geological Survey in cooperation with State of Wisconsin agencies

Control by USGS and USC&GS

Topography by photogrammetric methods from aerial photographs taken 1962. Field checked 1963

Polyconic projection. 1927 North American datum
10,000-foot grid based on Wisconsin coordinate system, south zone
1000-meter Universal Transverse Mercator grid ticks, zone 15, shown in blue

Red tint indicates areas in which only landmark buildings are shown

Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked

Revisions shown in purple compiled from aerial photographs taken 1974. This information not field checked

Purple tint indicates extension of urban areas

SCALE 1:24 000

0 1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 0 1 2 3 4 5 6 7 KILOMETERS

CONTOUR INTERVAL 20 FEET
DOTTED LINES REPRESENT 10-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929

UTM GRID AND 1974 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
AND BY THE WISCONSIN GEOLOGICAL AND NATURAL HISTORY SURVEY, MADISON, WISCONSIN 53706
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

WISCONSIN
QUADRANGLE LOCATION

ROAD CLASSIFICATION

Heavy duty	———	Light duty
Medium duty	— — —	Unimproved dirt

Interstate Route U S Route State Route

LA CROSSE, WIS.–MINN.
SW 4 LA CROSSE 15 QUADRANGLE
N4345—W9107.5/7.5

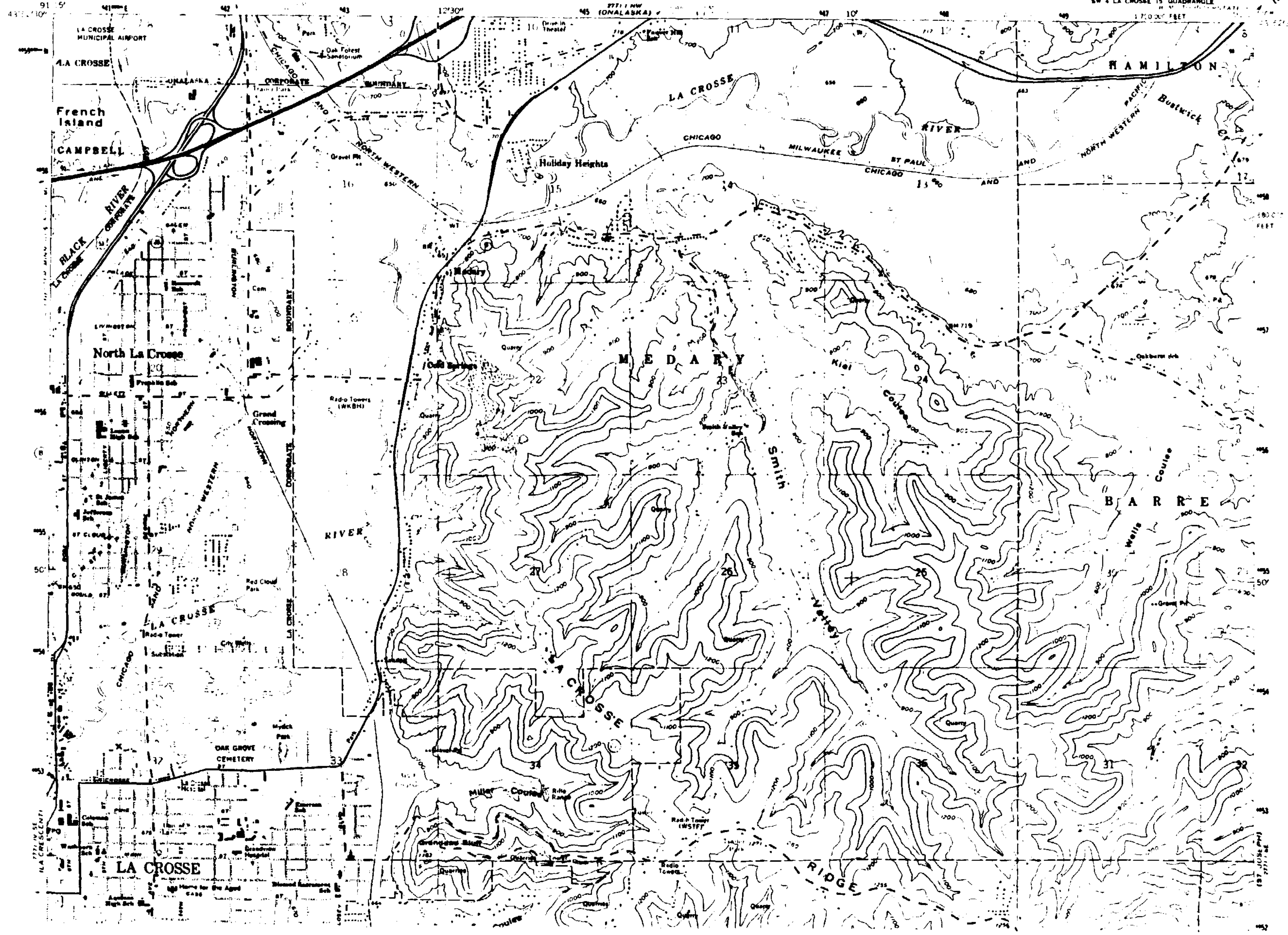
1963
PHOTOREVISED 1974
AMS 2771 I SW-SERIES V861

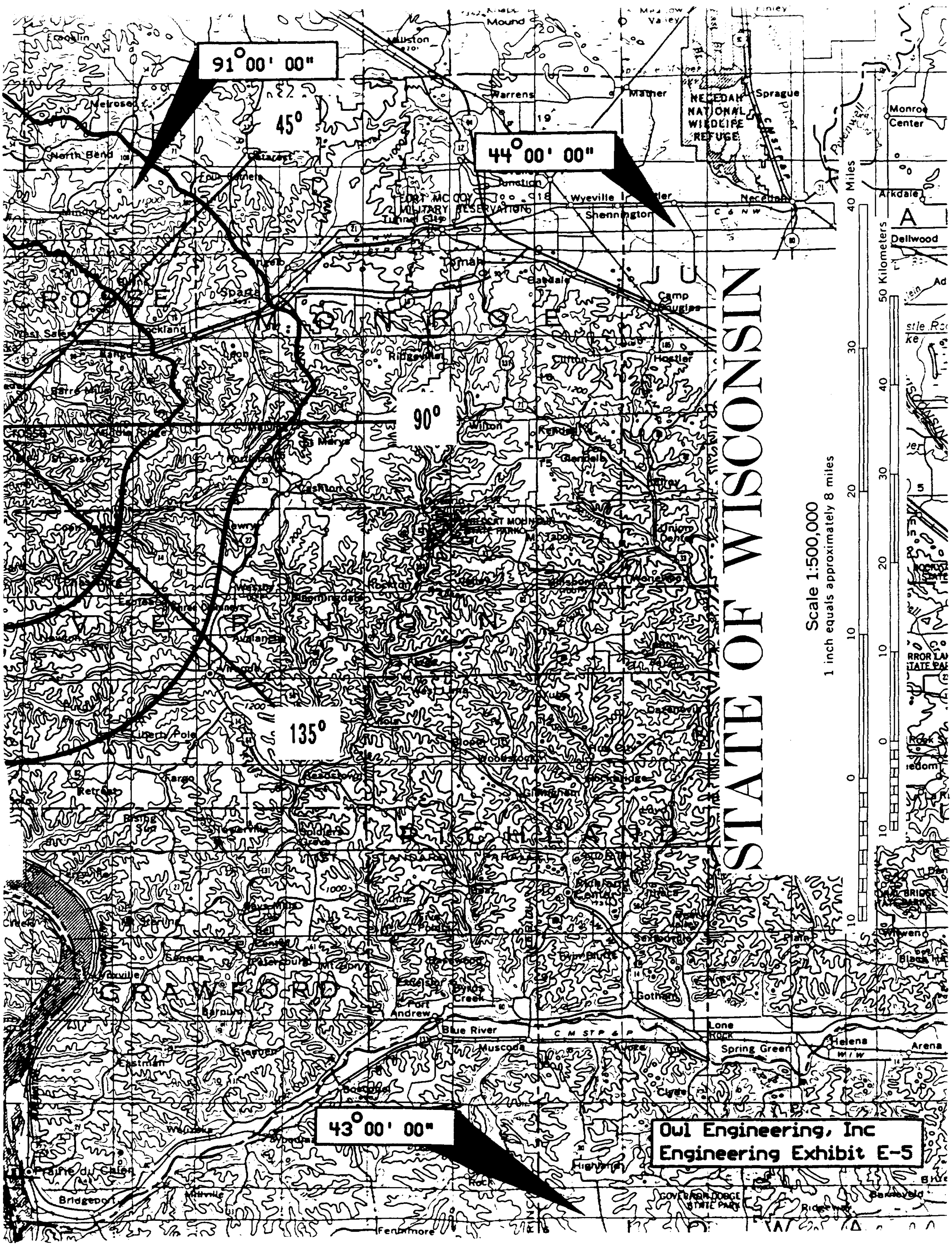
Oul Engineering, Inc
Engineering Exhibit E-4A

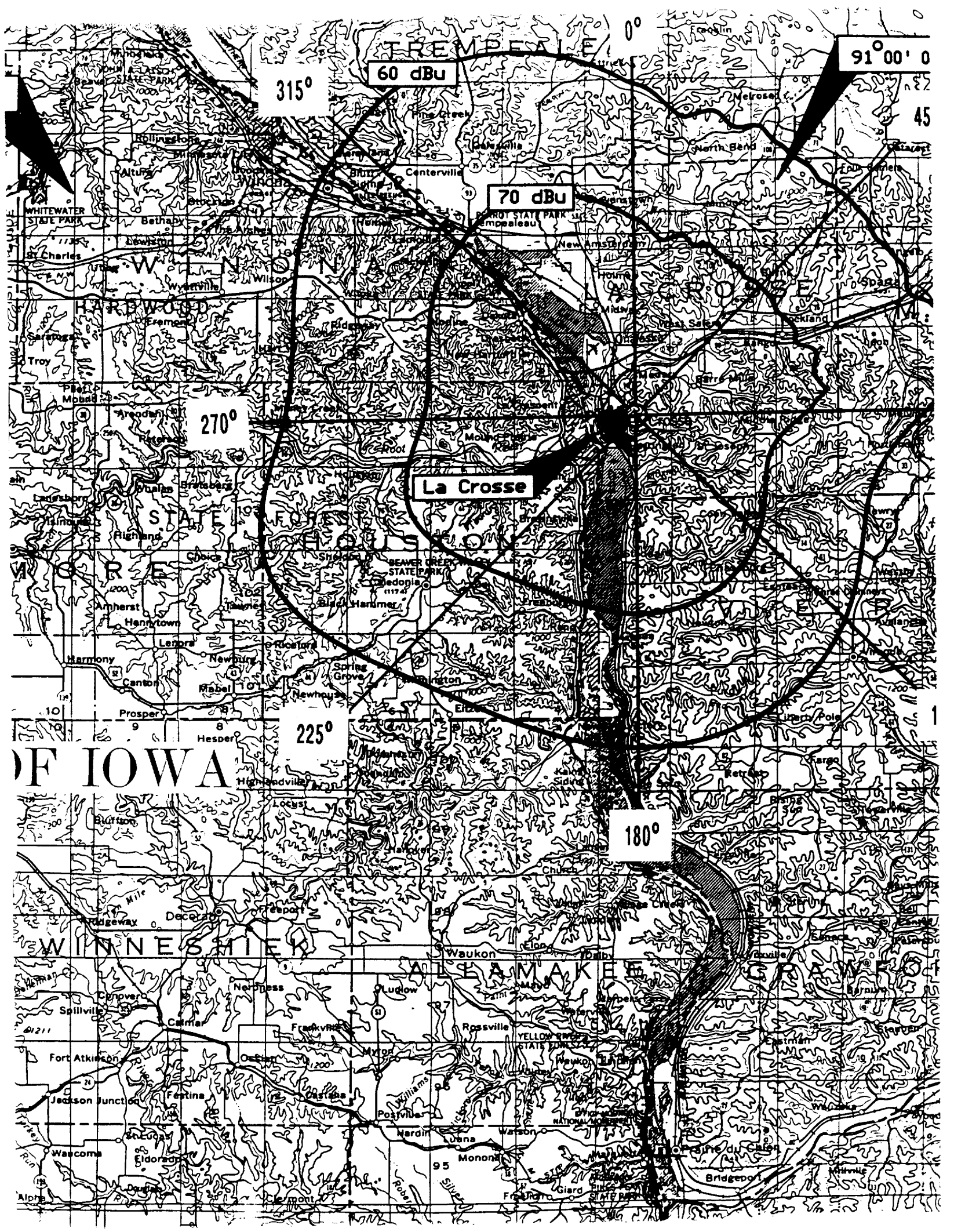
BARRE
St Joseph Ridge
Smith
Valley
Kiel Coulee
Wells Coulee
RIDGE
MEDARY
LA CROSSE
Bost Coulee
LA CROSSE
North La Crosse
OAK GROVE CEMETERY
CEMETERY
Herrington
Green Island
RIVER
BLACK RIVER
BURLINGTON
NORTH WESTERN
CHICAGO
Pammel Creek
LA CROSSE
HOUSTON CO

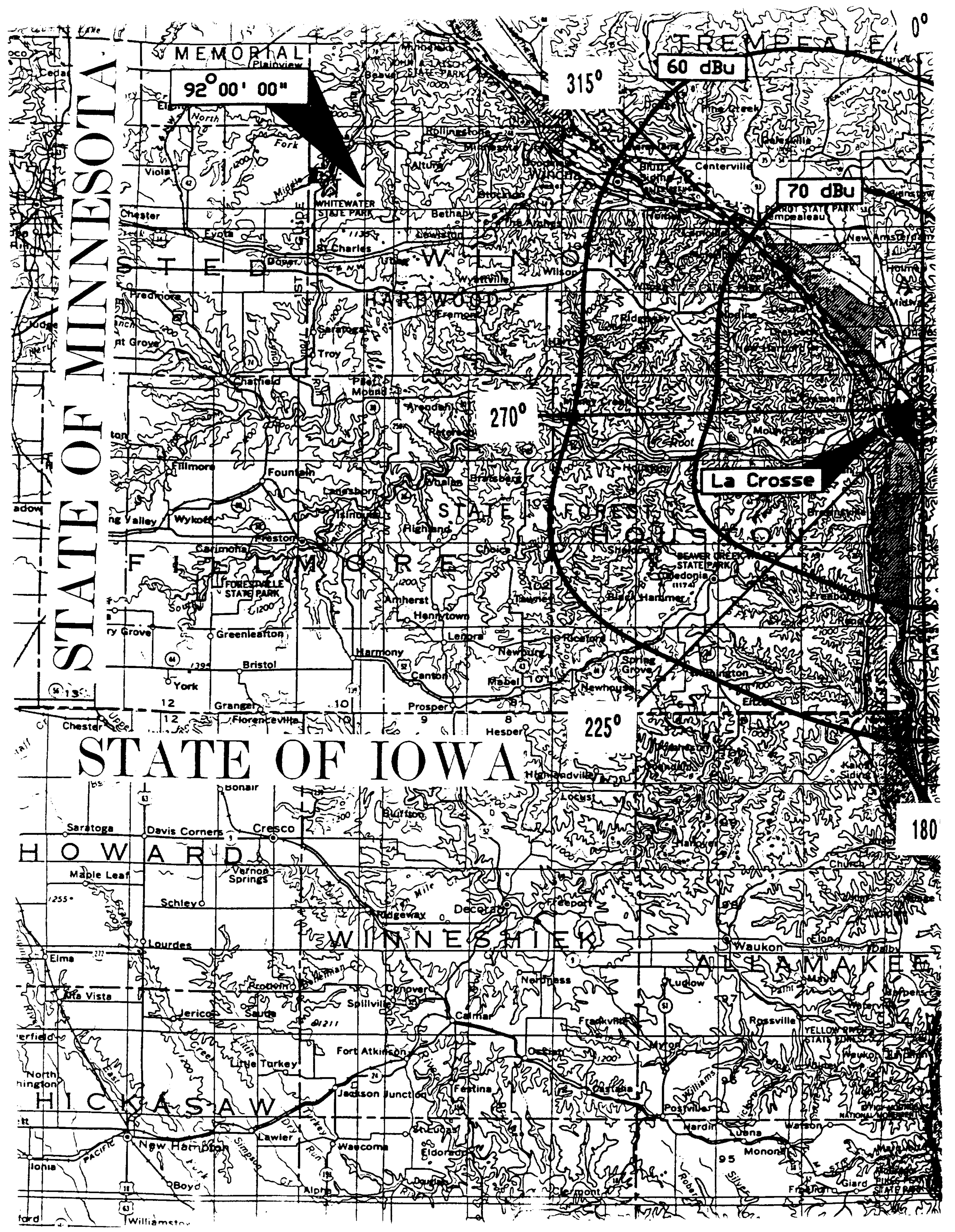
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LA CROSSE QUADRANGLE
WISCONSIN–MINNESOTA
7.5 MINUTE SERIES (TOPOGRAPHIC)


La Crosse Municipal Airport
La Crosse
French Island
Campbell
Black River
La Crosse River
North La Crosse
Holiday Heights
Medary
Smith Valley
Kiel Coulee
Hamilton
Barre
Bostwick Cr
Wells Coulee
Miller Coulee
Ridge
Oak Grove Cemetery
Grand Crossing
Radio Towers (WKBH)
Chicago Milwaukee St Paul and Pacific
Chicago and North Western
Burlington
Corporate Boundary


91° 00' 00"
45°
44° 00' 00"
90°
135°
43° 00' 00"
STATE OF WISCONSIN
Scale 1:500,000
1 inch equals approximately 8 miles
Miles
Kilometers
Owl Engineering, Inc
Engineering Exhibit E-5
MONROE
VERNON
RICHLAND
CRAWFORD
NECEDAH NATIONAL WILDLIFE REFUGE
FORT MCCOY MILITARY RESERVATION
Warrens
Mather
Sprague
Monroe Center
North Bend
Melrose
Wyeville
Shennington
Necedah
Arkdale
Dellwood
Tomah
Sparta
Camp Douglas
Rockland
Ridgeville
Clifton
Hustler
Wilton
Kendall
Elroy
Union Center
Wonewoc
Hillsboro
Viroqua
Westby
Readstown
Soldiers Grove
Gays Mills
Seneca
Eastman
Prairie du Chien
Bridgeport
Fennimore
Blue River
Muscoda
Lone Rock
Spring Green
Helena
Arena
Richland Center
Boscobel
Woodman
Wauzeka
Avoca
Gotham
Port Andrew
Boaz
Yuba
La Farge
Ontario
Cashton
Avalanche
Liberty Pole
Fargo
Rising Sun
Steuben
Ferryville
Eastman
Highland
Millville
Barneveld
Ridgeway
Plain
Loganville
Ithaca
Sextonville
Bloom City
Woodstock
Rockbridge
Excelsior
Byrds Creek
Mt Tabor
Dellwood


60 dBu
70 dBu
315°
0°
91° 00' 0
45
270°
La Crosse
225°
180°
TREMPEALEAU
WINONA
HARDWOOD
STATE FOREST
MONROE
JACKSON
LA CROSSE
WINNESHIEK
ALLAMAKEE
CRAWFORD
OF IOWA
WHITEWATER STATE PARK
JOHN A. LATSO STATE PARK
BEAVER CREEK STATE PARK
YELLOW RIVER STATE FOREST
PERROT STATE PARK
Winona
Centerville
Trempealeau
Galesville
Melrose
North Bend
Rollingstone
Altura
Bethany
St Charles
Wyattville
Wilson
Fremont
Saratoga
Troy
Pine Mound
Arcadia
Fairchild
Bratsberg
Galesboro
Highland
Choice
Sheldon
Dodgeville
Amherst
Hennytown
Lenora
Harmony
Canton
Rebel
Newburg
Spring Grove
Newhouse
Prosper
Hesper
Highlandville
Locust
Decorah
Ridgeway
Freeport
Waukon
Ludlow
Nordness
Cenover
Spillville
Calmar
Frankville
Rossville
Fort Atkinson
Ossian
Jackson Junction
Festina
Postville
Hardin
Luana
Monona
Waucoma
Eldorado
St Lucas
Douglas
Clermont
Alpha
Myron
Williams
Elon
Derby
Church
Seneca
Ossville
Sattre
Eastman
Bridgeport
Prairie du Chien
Giard
Frenchtown
Pine Creek
Blair
Hammer
Freeburg
Rushford
Wykoff
Lanesboro
Preston
Fountain
Harmony
Canton
Rebel
Prosper
Hesper
Highlandville
Decorah
Ridgeway
Freeport
Waukon
Ludlow
Nordness
Cenover
Spillville
Calmar
Frankville
Rossville
Fort Atkinson
Ossian
Jackson Junction
Festina
Postville
Hardin
Luana
Monona
Waucoma
Eldorado
St Lucas
Douglas
Clermont
Alpha
Myron
Williams
Elon
Derby
Church
Seneca
Ossville
Sattre
Eastman
Bridgeport
Prairie du Chien
Giard
Frenchtown


STATE OF MINNESOTA
STATE OF IOWA
92° 00' 00"
MEMORIAL
315°
0°
60 dBu
70 dBu
270°
La Crosse
225°
180
WINONA
FILLMORE
HOUSTON
HOWARD
WINNESHIEK
ALLAMAKEE
CHICKASAW
HARDWOOD
STATE FOREST
WHITEWATER STATE PARK
FORESTVILLE STATE PARK
BEAVER CREEK VALLEY STATE PARK
Chatfield
Preston
Harmony
Spring Grove
Caledonia
Cresco
Decorah
Waukon
Calmar
Fort Atkinson
New Hampton
Jackson Junction
Postville
Lanesboro
Rushford
Fountain
Wykoff
Canton
Mabel
Hesper
Winona
St Charles
Eyota
Dover
Altura
Lewiston
Wilson
Hokah
Brownsville

OWL ENGINEERING, INC.
CONSULTING COMMUNICATIONS ENGINEERS
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ENGINEERING EXHIBIT E-6
APPLICATION FOR FM CONSTRUCTION PERMIT
MISSISSIPPI VALLEY BROADCASTERS, INC.
La CROSSE, WISCONSIN

CHANNEL 292 12 KW 145 METERS

ENVIRONMENTAL IMPACT STATEMENT

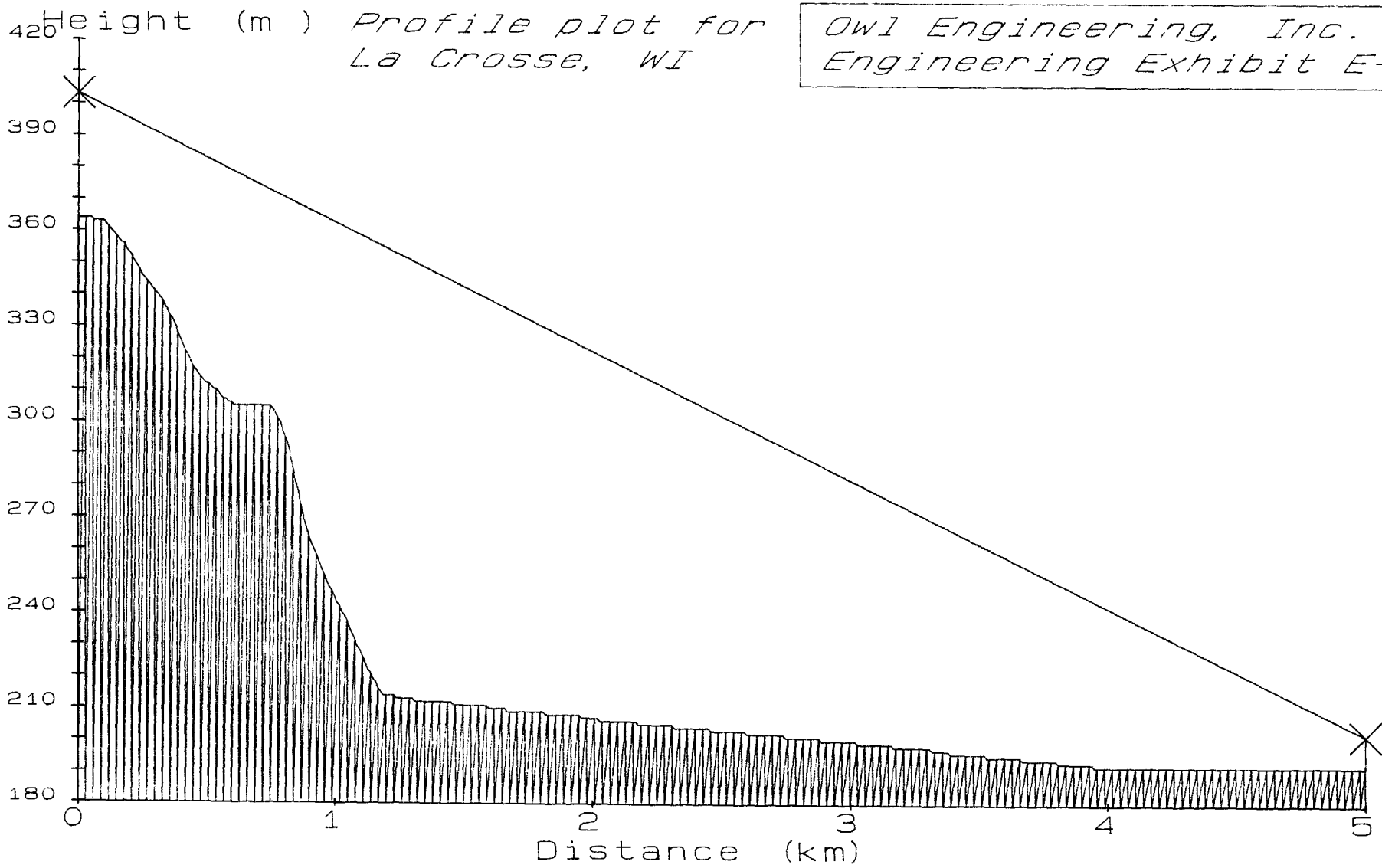
The instant proposal is categorically excluded from environmental processing since none of the conditions of Section 1.1306(b)(2) and (3) would be involved for the following reasons:

1) The site proposed is not in or near any location referenced in Section 1.1306(b)(1) as being of environmental interest.

2) The provisions of Section 1.1306(b)(2) relating to the use of high intensity strobe lighting does not apply since the antenna height proposed with this application does not require this form of lighting to be utilized.

3) Finally, the operation would not result in the adopted radio frequency radiation exposure guideline being exceeded at any location on the ground. Mississippi Valley will utilize a high gain antenna to minimize the downward radiation. Hence, the conditions of Section 1.1306(b)(3) would not be involved.

Owl Engineering, Inc.
Engineering Exhibit E-7



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ENGINEERING EXHIBIT E-8
APPLICATION FOR FM CONSTRUCTION PERMIT
MISSISSIPPI VALLEY BROADCASTERS, INC.
La CROSSE, WISCONSIN

CHANNEL 292 12 KW 145 METERS

CHANNEL SPACING STUDY

FM Channel 292-C3

LATITUDE: 43° 48′ 45"
LONGITUDE: 91° 11′ 55"

CHNL	Call	City	Class	Calculated Km.	Required Km.	Delta km.	Bearing °
238	NO CONFLICT						
239		FAWI La Crosse	C2	18.18	17	1.18	194.16
239	WSPL	FMWI La Crosse	C2	21.15	17	4.15	199.19
289	NO CONFLICT						
290	NO CONFLICT						
291	KLSSFM	FMIA Mason City	C1	171.74	144	27.74	244.87
291		FAIA Mason City	C1	171.74	144	27.74	244.87
291		FRWI Adams	A	112.13	89	23.13	81.57
292	WWQMFM	FMWI Middleton	A	162.38	142	20.38	120.93
292	WEVRFM	FMWI River Falls	A	166.47	142	24.47	316.52
292		FAWI Middleton	A	162.38	142	20.38	120.93
292		FAWI River Falls	A	166.47	142	24.47	316.52
292	WWQMFM	FMWI Middleton	A	162.38	142	20.38	120.93
293	WLJY	FMWI Marshfield	C1	141.81	144	-2.19	48.73*
294	NO CONFLICT						
295	KROCFM	FMMN Rochester	C	102.61	96	6.61	255.20
295		FAMN Rochester	C	102.61	96	6.61	255.20

* This short spaced condition is eliminated pursuant to FCC Rules Section 73.215. Please see engineering statement.

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ENGINEERING EXHIBIT E-9
APPLICATION FOR FM CONSTRUCTION PERMIT
MISSISSIPPI VALLEY BROADCASTERS, INC.
La CROSSE, WISCONSIN

CHANNEL 292 12 KW 145 METERS

DIRECTIONAL ANTENNA DATA

Engineering Exhibit E-9A shows a tabulation of the composite relative field pattern showing the limits in order to prevent prohibited overlap with radio station WLJY. This tabulation shows the absolute radiation limits in order to eliminate prohibited overlap. Mississippi Valley will employ an antenna that adheres to FCC Rules Section 73.316. Engineering Exhibit E-9B shows a plot of the relative field necessary to eliminate overlap of the protected and interfering contours.

The relative field minimum was calculated by the following procedure. First, the distance to WLJY's protected and interfering contours were calculated assuming a maximized class C1 facility and determining the height above average terrain in the relevant directions to the proposed facility. Knowing the distance to WLJY's protected and interfering contours, the relative field necessary to eliminate any prohibited overlap could be calculated.

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ENGINEERING EXHIBIT E-9 CONTINUED
APPLICATION FOR FM CONSTRUCTION PERMIT
MISSISSIPPI VALLEY BROADCASTERS, INC.
La CROSSE, WISCONSIN

CHANNEL 292 12 KW 145 METERS

DIRECTIONAL ANTENNA DATA

Mississippi Valley proposes to use a Jampro JMPC 4 bay or similar directional antenna and will follow manufacturer's recommendations as to the mounting and maintenance of the antenna. The antenna will be field tested at the manufacturer's test site to ensure correct pattern directivity. Because the close proximity of WIZM's auxiliary tower may affect the directional antenna, the antenna will be designed to correct for the possible affects of this tower on directional operation. The antenna will not be mounted on the top of an antenna tower which includes a top-mounted platform larger than the nominal cross sectional area of the tower in the horizontal plane. No other antennas will be mounted on the same level as the directional antenna. Mississippi Valley will also include a statement from a licensed surveyor that the antenna has been installed pursuant to manufacturer's instructions and is in the proper orientation if awarded the construction permit for channel 292C3 at La Crosse, WI.

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ENGINEERING EXHIBIT E-9A
APPLICATION FOR FM CONSTRUCTION PERMIT
MISSISSIPPI VALLEY BROADCASTERS, INC.
La CROSSE, WISCONSIN

CHANNEL 292 12 KW 145 METERS

DIRECTIONAL ANTENNA DATA

Bearing	Relative Power	Relative Field	ERP (KW)	ERP (dBk)	Field at 1 mile mV/m
0.0	1.0000	1.0000	12.00	10.792	476.56
9.0	1.0000	1.0000	12.00	10.792	476.56
10.0	0.9640	0.9819	11.57	10.633	467.91
11.0	0.9294	0.9640	11.15	10.474	459.42
12.0	0.8959	0.9465	10.75	10.315	451.09
13.0	0.8637	0.9294	10.36	10.156	442.90
14.0	0.8327	0.9125	9.99	9.997	434.87
15.0	0.8027	0.8959	9.63	9.837	426.98
16.0	0.7739	0.8797	9.29	9.678	419.23
17.0	0.7460	0.8637	8.95	9.519	411.62
18.0	0.7192	0.8481	8.63	9.360	404.15
19.0	0.6933	0.8327	8.32	9.201	396.82
20.0	0.6684	0.8176	8.02	9.042	389.62
21.0	0.6444	0.8027	7.73	8.883	382.55
22.0	0.6212	0.7882	7.45	8.724	375.61
23.0	0.5989	0.7739	7.19	8.565	368.79
24.0	0.5773	0.7598	6.93	8.406	362.10
25.0	0.5566	0.7460	6.68	8.247	355.53
26.0	0.5365	0.7325	6.44	8.088	349.08
27.0	0.5173	0.7192	6.21	7.929	342.74
28.0	0.4986	0.7062	5.98	7.770	336.52
29.0	0.4807	0.6933	5.77	7.611	330.42
30.0	0.4634	0.6808	5.56	7.452	324.42
31.0	0.4468	0.6684	5.36	7.293	318.54
32.0	0.4307	0.6563	5.17	7.134	312.76
33.0	0.4152	0.6444	4.98	6.974	307.08
34.0	0.4003	0.6327	4.80	6.815	301.51
35.0	0.3859	0.6212	4.63	6.656	296.04
36.0	0.3720	0.6099	4.46	6.497	290.67
37.0	0.3586	0.5989	4.30	6.338	285.39
38.0	0.3457	0.5880	4.15	6.179	280.21
39.0	0.3333	0.5773	4.00	6.020	275.13
40.0	0.3457	0.5880	4.15	6.179	280.21
41.0	0.3586	0.5989	4.30	6.338	285.39
42.0	0.3720	0.6099	4.46	6.497	290.67

Continued on next page.

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ENGINEERING EXHIBIT E-9A
APPLICATION FOR FM CONSTRUCTION PERMIT
MISSISSIPPI VALLEY BROADCASTERS, INC.
La CROSSE, WISCONSIN

CHANNEL 292 12 KW 145 METERS

DIRECTIONAL ANTENNA DATA

Bearing	Relative Power	Relative Field	ERP (KW)	ERP (dBk)	Field at 1 mile mV/m
43.0	0.3859	0.6212	4.63	6.656	296.04
44.0	0.4003	0.6327	4.80	6.815	301.51
45.0	0.4152	0.6444	4.98	6.974	307.08
46.0	0.4307	0.6563	5.17	7.134	312.76
47.0	0.4468	0.6684	5.36	7.293	318.54
48.0	0.4634	0.6808	5.56	7.452	324.42
49.0	0.4807	0.6933	5.77	7.611	330.42
50.0	0.4986	0.7062	5.98	7.770	336.52
51.0	0.5173	0.7192	6.21	7.929	342.74
52.0	0.5365	0.7325	6.44	8.088	349.08
53.0	0.5566	0.7460	6.68	8.247	355.53
54.0	0.5773	0.7598	6.93	8.406	362.10
55.0	0.5989	0.7739	7.19	8.565	368.79
56.0	0.6212	0.7882	7.45	8.724	375.61
57.0	0.6444	0.8027	7.73	8.883	382.55
58.0	0.6684	0.8176	8.02	9.042	389.62
59.0	0.6933	0.8327	8.32	9.201	396.82
60.0	0.7192	0.8481	8.63	9.360	404.15
61.0	0.7460	0.8637	8.95	9.519	411.62
62.0	0.7739	0.8797	9.29	9.678	419.23
63.0	0.8027	0.8959	9.63	9.837	426.98
64.0	0.8327	0.9125	9.99	9.997	434.87
65.0	0.8637	0.9294	10.36	10.156	442.90
66.0	0.8959	0.9465	10.75	10.315	451.09
67.0	0.9294	0.9640	11.15	10.474	459.42
68.0	0.9640	0.9819	11.57	10.633	467.91
69.0	1.0000	1.0000	12.00	10.792	476.56
90.0	1.0000	1.0000	12.00	10.792	766.95
135.0	1.0000	1.0000	12.00	10.792	766.95
180.0	1.0000	1.0000	12.00	10.792	766.95
225.0	1.0000	1.0000	12.00	10.792	766.95
244.9	1.0000	1.0000	12.00	10.792	766.95
270.0	1.0000	1.0000	12.00	10.792	766.95
315.0	1.0000	1.0000	12.00	10.792	766.95

Null heading is 39 degrees. Relative field is 0.5773%, -4.77 dB.

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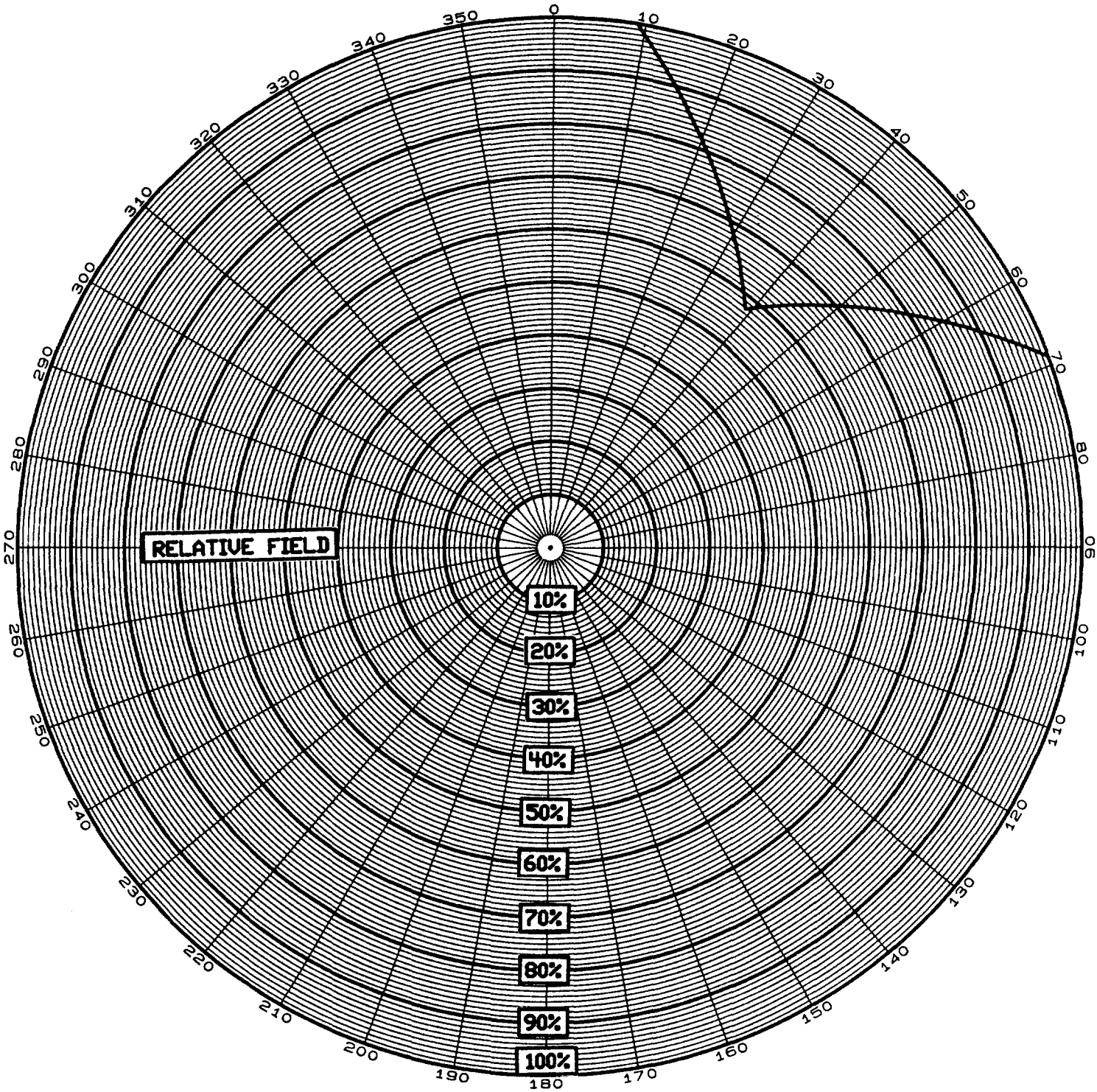

PLOT OF FCC LIMITS

FINAL PATTERN NOT TO EXCEED LIMITS

Owl Engineering, Inc
Engineering Exhibit E-9B